

6153188

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CGGCTGTGTGCGCAGTCTTTCATGGGTTCGCCGACGAGGAGGTCTCTGTGGCTGCGGCGGC 60
TGCTAACTGCGCCACCTGCTGCAGCCCTGTCCCCGCCGCTCTGAAGCGCGCGTCTGAAGC 120

M P P P R T G R G L L W L G L V L S S 19
CGAAATGCCGCCACCCCGACCGGCCGAGGCCCTTCTCTGGCTGGTCTGGTCTGTGAGCTC 180

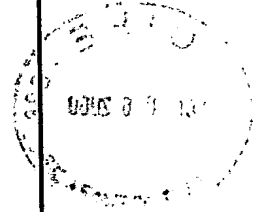
*

V C V A↓ L G↓ S E T Q A N S T T D A L N V 39
CGTCTGCGTCCCTCGGATCCGAAACGCAGGCCAACTCGACCACAGATGCTCTGAACGT 240

L L I I V D D L R P S L G C Y G D K L V 59
TCTTCTCATCGTGGATGACCTGCGCCCCCTCCCTGGGCTGTTATGGGGATAAGCTGGT 320

A_____A

Figure 1A



A_____A

R S P N I D Q L A S H S L L F Q N A F A 79
GAGGTCCCAATATGACCAACTGGCATCCACAGCCTCCTCTCCAGAATGCCCTTGC 360

Q Q A V C A P S R V S F L T G R R P D T 99
GCAGCAAGCAGTGTGCGCCCCGAGCCGCTTCTTCTCACTGGCAGGAGACCTGACAC 420

*

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T R L Y D F N S Y W R V H A G N F S T I 119
CACCCGCTGTACGACTTCAACTCCTACTGGAGGTGCACGCTGGAAACTTCTCCACCAT 480

P Q Y F K E N G Y V T M S V G K V F H P 139
CCCCCAGTACTCAAGGAGAAATGGCTATGTGACCATGTGCGTGGGAAAGTCTTTCACCC 540

B_____B

Figure 1B



B_____B

*

G I S S N H T D D S P Y S W S F P P Y H 159
TGGGATATCTTCTAACCATAACCGATGATTCTCCGTATAGCTGGTCTTTCCACCTTATCA 600

P S S E K Y E N T K T C R G P D G E L H 179
TCCTTCCTCTGAGAAGTATGAAAACACTAAGACATGTCGAGGGCCAGATGGAGAACTCCA 660

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A W L L C P V D V L D V P E G T L P D K 199
TGCCAAACCTGCTTTGCCCTGTGGATGTGCTGGATGTTCCCGAGGGCACCTTGCCCTGACAA 720

Q S T E Q A I Q L L E K M K T S A S P F 219
ACAGAGCACTGAGCAAGCCATACAGTTGTTGGAAAAGATGAAAACGTCAGCCAGTCCTTT 780

C_____C

Figure 1C



C-----C

F L A V G Y H K P H I P F R Y P K E F Q 239
CTTCCTGGCCGTGGGTATCATAGCCACACATCCCCTTCAGATACCCCAAGGAATTCA 840

*

K L Y P L E N I T L A P D P E V P D G L 259
GAAGTTGTATCCCTTGGAGAACATCACCCCTGGCCCCCGATCCCGAGTCCCTGATGGCCT 900

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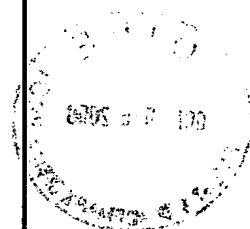
P P V A Y N P W M D I R Q R E D V Q A L 279
ACCCCTGTGGCCTACAACCCCTGGATGGACATCAGGCAACGGGAAGACGTCCAAGCCTT 960

*

N I S V P Y G P I P V D F Q R K I R Q S 299
AAACATCAGTGTCCGTATGGTCCCAATTCCCTGTGGACTTTCAGCGGAAAAATCCGCCAGAG 1020

D-----D

Figure 1D



D-----D

Y F A S V S Y L D T Q V G R L L S A L D 319
CTACTTTGCCCTCTGTGCATATTGGATACACAGTCGGCCCTCTTGAGTGTTCGA 1080

*

D L Q L A N S T I I A F T S D H G W A L 339
CGATCTTCAGCTGGCCAACAGCACCATCATTTGCATTTACCTCGGATCATGGTGGCTCT 1140

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G E H G E W A K Y S N F D V A T H V P L 359
AGTGAAACATGGAGAATGGCCAAATACAGCAATTTTGATGTGTACCATGTTCCCT 1200

I F Y V P G R T A S L P E A G E K L F P 379
GATATTCTATGTTCCCTGGAAGGACGGCTTCACTTCCGGAGGCAGGAGAGCTTTTCCC 1260

E-----E

Figure 1E



E _____ E

Y L D P F D S A S Q L M E P G R Q S M D 399
TTACCTCGACCCTTTGTATTCGCCCTCACAGTTGATGGAGCCAGGCAATCCATGGA 1320

L V E L V S L F P T L A G L A G L Q V P 419
CCTTGGAACCTTGTCCTCTTTTCCACGCTGGCTGGACTTGCAGGACTGCAGGTTCC 1380

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P R C P V P S F H V E L C R E G K N L L 439
ACCTCGCTGCCCGTTCCCTTCATTTACGTTGAGCTGTGCAGAGAGCAAGAACCTTCT 1440

K H F R F R D L E E D P Y L P G N P R E 459
GAAGCATTTTCGATTCGCTGACTTGAAGAGGATCCGTACCTCCCTGGTAATCCCCGTGA 1500

F _____ F



Figure 1F

F_____F

L I A Y S O Y P R P S D I P Q W N S D K 479
ACTGATTGCCCTATAGCCAGTATCCCCGGCCTTCAGACATCCCTCAGTGGAAATCTGACAA 1560

P S L K D I K I M G Y S I R T I D Y R Y 499
GCCGAGTTTAAAGATATAAAGATCATGGGCTATTCCATACGCACCATAGACTATAGGTA 1620

*

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T V W V G F N P D E F L A N F S D I H A 519
TACTGTGGGTTGGCTTCAATCCTGATGAATTTCTAGCTAACTTTTCTGACATCCATGC 1680

*

G E L Y F V D S D P L Q D H N M Y N D S 539
AGGGGAACGTGATTTTGTGGATTCTGACCCATTGCAGGATCACAAATATGTATAATGATTC 1740

G_____G



Figure 1G

G-----G

Q	G	G	D	L	F	Q	L	L	M	P	
											550
CCAAGTGGAGATCTTTCCAGTTGTTGATGCCCTTGAGTTTGGCCAACCATGGATGGCAA											1800
ATGTGATGTGCTCCCTTCCAGCTGGTGAGAGGAGGAGTTAGAGCTGGTCGTTTGTGATT											1860
ACCCATAATATTGGAAGCAGCCTGAGGGCTAGTTAATCCAAACATGCATCAACAATTGG											1920
CCTGAGAATATGTAAACAGCCAAACCCTTTTCGTTTAGTCTTTATAAAATTATAATTGGT											1980
AATTGGACCAGTTTTTTTTTAAATTTCCCTCTTTTAAACAGTTACGGCTTATTACTG											2040
<u>AAATAATACAAAGCAAACTCAAGTTATGTATACCTTTGGATACGAAGACCATACA</u>											2100
TAATAACCAACATAACATTATACACAAGAATACTTTCATTATTTGTGGAATTAGTGC											2160
ATTTCAAAAAGTAATCATATATCAAACTAGGCACCACACTAAGTTCCTGATTATTTGTT											2220
TATAAATTTAATAATATCTTATGAGCCCTATATATTCAAAATATTATGTTAACATGTAA											2280
TCCATGTTTCTTTTCC											2297

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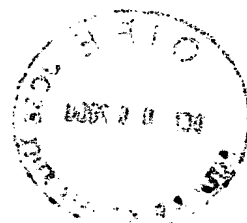


Figure 1H

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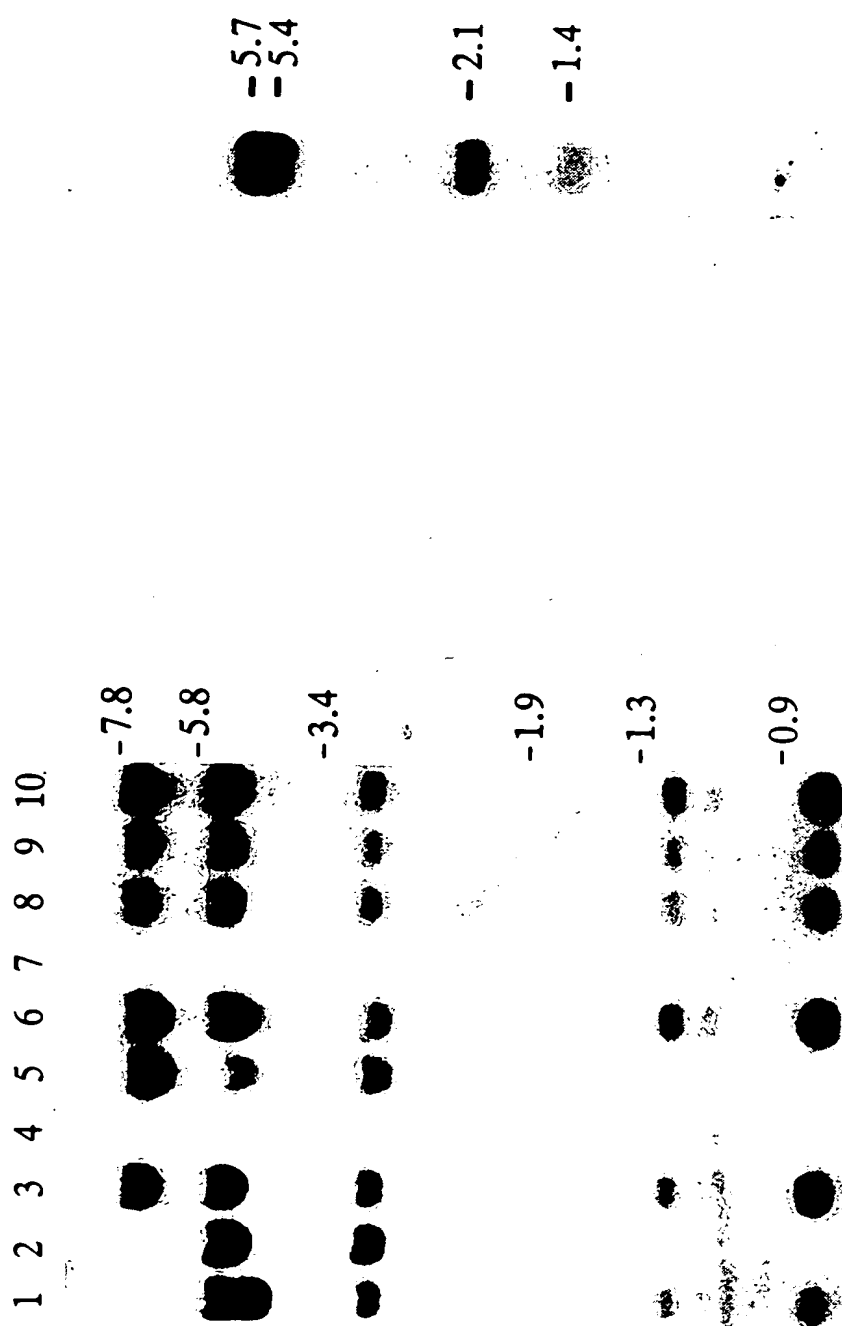


Figure 2A

Figure 2B

2 MPPPRGTGRGLLWLGLVLSVVCVALGSETQANST

6

A MGAPRSLLLALAAAGLAVA

B MGPRGAASLPRGPGPRRLLPVVLPLLLLLLLAPPGSGA

C MPLRKMKIPFLLLLFFLWEAES

U MKSAPFLFLLGLLVTAQTQDPALLDLLRENPDLLSLLLQSNHR

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2 TDALNVLLIIIVDDLR-PSLGCYGDKLVRSPNIDQLASHSLLFQNAFAQQAVCAPSRVVSFLTGR

6 TRRPNVVLLLTDDQD-EVLGGMTPLKKTALIGEM--GMTFSSAYVPSALCCPSRASILTGR

A RPPNIVLIFADDLGYDGLGCYGHPSSTPNLDQLAAGGLRFTDFYVPVSLCTPSRAALLTGR

B GASRPPHLVFLAADDLGWNDVG-FHGSRI RTPHLDALAAGGVLLDNYTQ-PLCTPSRSQLLTGR

C HAASRPNIILVMADDLGIGDPGCYGNKTI RTPNIDRLASGGVKLTQHLAASPLCTPSRAAFMTGR

U APLVKPNVVLLVADDMGSGDLTSYGHPTQEAGFIDKMAAEGLRFTNGYVGDVCTPSRSAIMTGR

* * * * *

A

Figure 3A

A-----A

2 RPD^TTRL^YD-----FN-----SYWRVHAGNFSTIPQYFKEN-GYV^IMSV^GKV^FHPGISSNHT
6 YPHNHHV^VN-----NTLEGNCSKSWQKIQEPNTFPAILRSMCGYQ^IFFAGK-YLNEYGAPDA
A LPVRMG^MYP-----GVLV-----PSSRGG^LPLEEVTVAEVLAA^R-GYL^ITGMAGK-WHLGVG-----
B YQIR^TGLQ^H-----QIIW-----PCQPSCVPLDEKLLPQLLKEA-GYT^IIHMV^GK-WHLGMY-----
C YPVRSGMASWRTGVFL--FTASSGGLPTDEITFAKLLKDQ-GYST^IALIGK-WHLGMSCHSK
U LPVRIG^TFG--ETRVFL--PWTKTGLPKSEL^TIAEAMKEA-GYA^ITGMV^GK-WHLGMNENSS

* * * * *

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2 DDSP-----YSWSFPPYHPS-SEKYENTKTCRGP^DGE-----LHA
6 GGLEHV^PL--GWSYWAYALEKNS--KYNY^TLSINGKARK-----H
A PEGAFLPPHQFHRFLGIPYSH-DQGPCQNLTCFPPATP-----C
B RKEC-LPTRRGFD^TYFGYLLGS-EDYYSHERCT^LIDL-----N
C TDFCHHPLHHGFNYFYGISLTNLRDCKPGE^SVFTTGFKRLVFLPLQIVGV^TLLTLA
U TDGAHL^PFNHGFD-FVGHNL^PF-TNSWSCDD^TGLHKD^EEP-----D

* * *

B-----B

Figure 3B



B-----B

2 NLLCPVDVLDVPEGTL PDKQSTEQAIQLLEKMKTSASPF~~FLAVGYHKPHIPFRYPKEFQKLY~~

6 GENYSVDYLTVDLA-----NVSLDF-----LDYKSNFEPPFF

A DGGCDQGLVPIPL-----

B VTRC-----ALD-----

C ALNC-LGLLHVPLG-----VFFSLLFLAALILTLFLGF-----LHYFRPLNCF-

U SQRC-----YL-----

* * *

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2 -----PLENITLAPDPEVPDGLPPVAYNPWMDIRQR--EDVQALNISVPYGPPIPVDF

6 MMIATPAPHSPWTAAPQYQKAFQNVFAPRNKNFNH--GTNKHWHLI-----RQAKTPM

A -----LANLSVEAQPPWLPGLEARYMAFAHDLMADAQRQDRPFFLYYASHHHTHPQ

B -----FRDGEVATGYKNMYSTNIFTKRAIALITN-HPPEKPLFLYLALQSVHEPL

C -----MMRNYEIIQQPMSYDNLTRQLTVEEAAQFIQ--RNTETPFLLVLSYLHVHTAL

U -----YVNATLVSQPYQHKGLTQLFTDDALGFLED--NHADPFFLYVAFAMHTSL

* * * *

C-----C
Figure 3C

C-----C

2 -----QRKIRQSYFASVSYLDTQVGRLLSALDDLQLANSIIIAFTSDHGWALGE
6 TN-----SSIQFLDNAFRKRW-QTLLSVDDLVEKLVKRLEFTGELNNIYIFYTSDNGYHTG-
A -----FSGQSFASRGRGPFGLMELDAAVGTLMTAIGDLGLLEETLVIFTADNGPETMR
B QVPEEYLKPYDFIQDKNRHHYAGMVSLMDEAVGNVTAALKSSGLWNNIVFIFSTDNGGQTL-
C -----FSSKDFAGKSQHGVIYGDAVEEMDWSVGQILNLLDELRLANDTLLIYFTSDQGAHVEE
U -----FSSDDFSCTSRRGRYGDNLLEMHDAVQKIVDKLEENNISENTIIFFI SDHGP HREY

* * * * *

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2 HGEWAKYSNFDVATHVPLIFYVPGRTASLPEAGEKLFYPYLDPPFDSASQLMEPGRQSM
6 -----QFSL-----PIDKRQLYEFDIKV-----PLLVRGP GIK-PNQT SK
A MS-----RGGCSGLL-----RCGKGTTYEGGVRE-----PALAFWP GHIAPGVT-H
B -----AGGNNWPL-----RGRKWSLWEGGVRG-----VGFVASPLLKQKGVKNR
C VSSKGEI---HGGSNIGIY---KGGKANNWEGGIRV---PGILRWP RVIQAGQKID
U CE-----EGGDASIF-----RGGKSHSWEGGHR I---PYIVYWP GTISPGIS-N

** * * * *

D-----D

Figure 3D

D-----D

2 DLVELVSLFPTTLAGLAGLVPPRCVPVPSFHVLCREGKNLLKHFRFRDLEEDPYLPGNPREL
6 MLVANIDLGPITLIDAGYDLNKT-QMDGMSL-----LPILRGASNLTWRSDDL
A ELASSLDLLPTTLAALAGAPLPNV-TLDGFDL-----RPPAAGHRQEPSAVSLL
B ELIHISDWLPTTLVKLARGHTNGTKPLDGFV-----WKTISEGSPSP-RIELL
C EPTSNMDIFPTTVAKLAGAPLPEDRIIDGRDL-----MPLLEGKSQRSDHEFLF
U EIVTSMIDIATTAADLGGTTLPDTRIYDGKSI-----KDVLLLEGASAP-HSSFF

* * * * *

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2 IAYSQYPRPSDIPQWNSDKPSLKDIKIMGYSIRTIDYRYTVWVG-----
6 VEYQGEGRNVTDPTCPSLSPGVSCFPDCVEDAYNNTYACVRTMSALW-NLQYC--
A LPVLPRRGWGFCCAD-----WKVQGSLLHPGSAHSDTTAD-----PAC--
B HNIDPNFVDSSPCPRNSMAPAKDDSSLPEYSAFNTSVHAAIRHGNWKLTLTGYPGCGY
C HYCNAYLNAVRWHPQNSTSIWKAFFFTPNFNPVGSNGCFAT-----HVC--
U YYCKDNLMAVRVGKYKAHFRTQVRVSQDEYGLECAGG-FPL-----EDY--

E-----E

Figure 3E

E _____ E

2 - FNPDE--FLANFSDIHAGE-----LYFVDSDFLQDHNMY--NDSQGGDLFQLLMP
6 -----EFDDQEVFVEVYNLTADPDQITNI---AKTIDPELLGKMNYRLMMLQS
A -----HASSSLTAHEPP---L-LYDLSKDPGENYNLLGGVAGATPEVLQALKQLQLLKAQ
B WFPPPSQYNVSEIPSSDPPTKTLWLFDIDRDPFEERHDL---SREYPHIVTKLLSRLQFYHKKH
C -F-----CFGSVVTHHDPP---L-LFDISKDPFRERNPL---TPASEPRFYEILKVMQEAADR
U -FDCND-CEGDCVTEHDPP---L-LFDLHRDPGEAYPL--EACGHEDVFLT VKSTVEEHKAA

** * * * *

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2
6 CSGPTCRTPGVFDPGYR-FDPRLMF-----SNRGSVTRRRFSKHL
A LDAAVTFGPSQVARGE---DPALQICCHPGCTPRPACCHCPDPHA
B SVPV--YFPAQ-----DPR-----CD-----PKATGVWGPWM
C HTQTLPEVPDQFSWNNFLWKPWQLCCP-----STGLSCQCDREKQDKRLSR
U LVKGTPLLDSDHHSIVPCCNPANGCICNYVHEPGMPECYQDQVATAARHYRP

*

Figure 3F

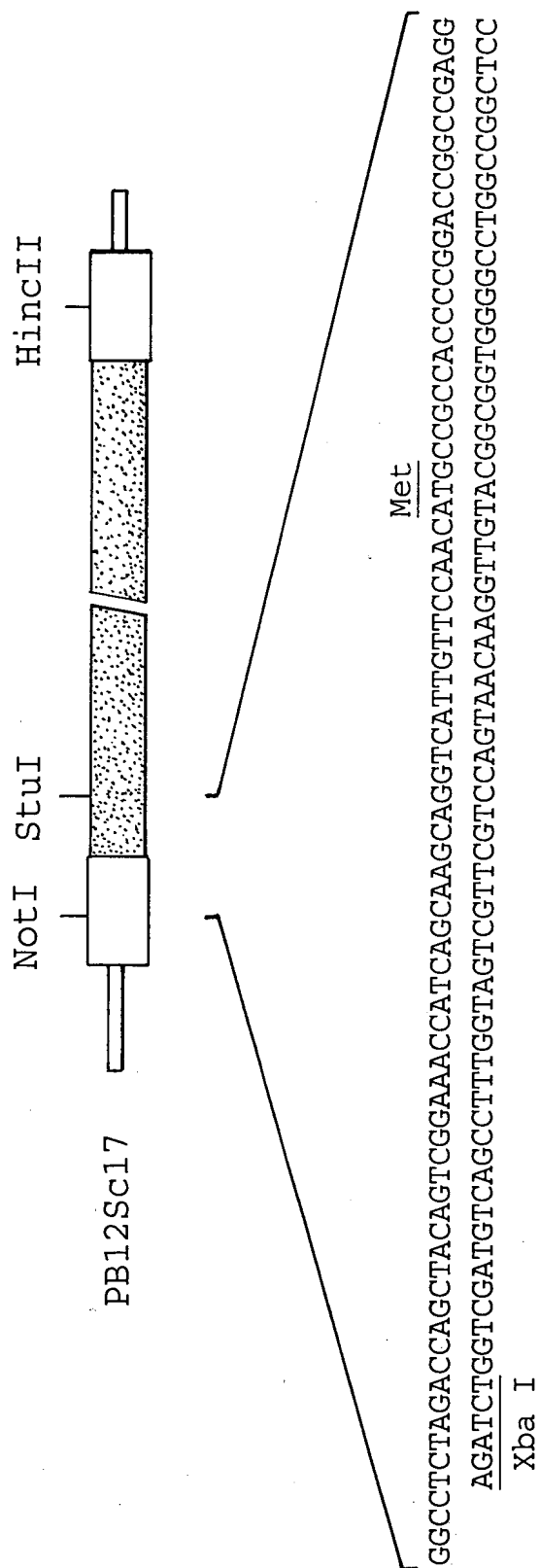
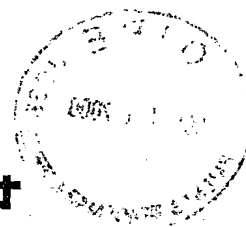


Figure 4



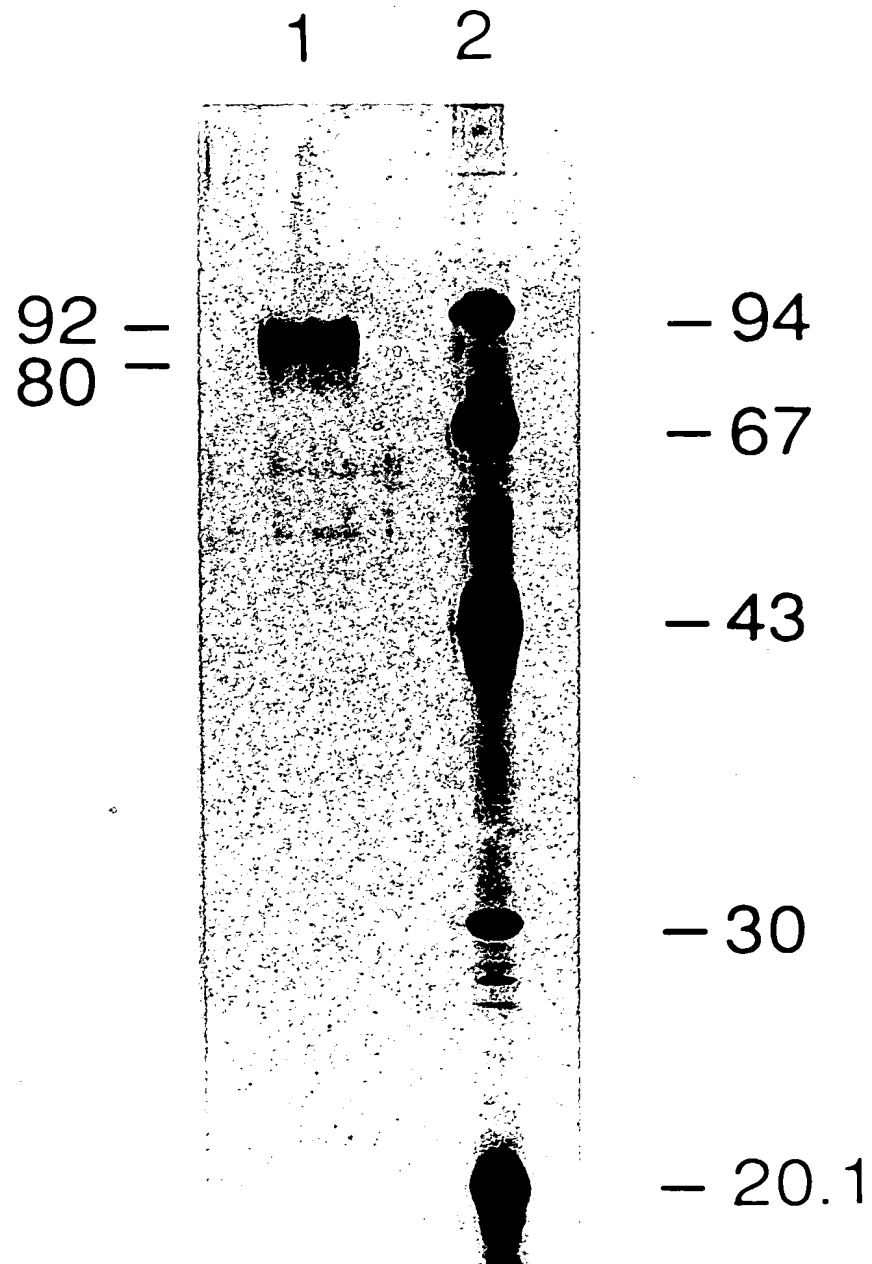


Figure 5

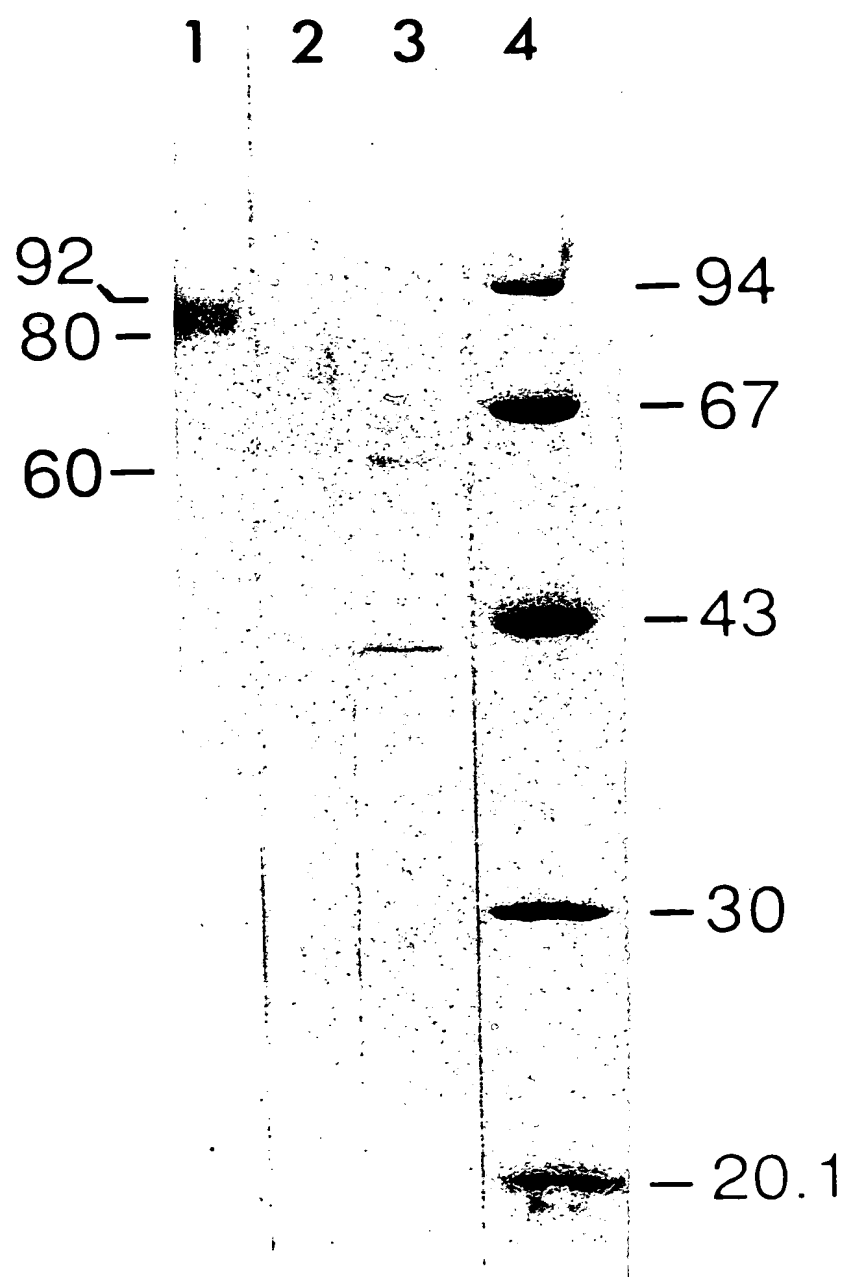


Figure 6

[illegible]

Figure 7A



A_____A

ttacctcaccaagccccctccctcctgtgtag.....**exonII**...ATGCTCTGAACGTTCTTCTCA
TCATCGTGATGACCTGCGCCCTCCCTGGCTGTATGGGATAAGCTGGTGAGTCCCCAAATATT
GACCAACTGGCATCCACAGCCTCCTCTCCAGAAATGCCCTTTGCGCAGgtatgtctgggaacctctag
ctgtgggtgtgctgcttcgtgcactgaggggtggggcgaggagcttcagctattgtcagatggca
cagattgtcgggacatcttgttagaggggaagcatagctggaaa..**intron2**..agggcgggttgct
tggttacctaagagatggcagacatgttttgctgtggcgatgcttacctctgcttctgctccctaaca
g.....**exonIII**..CAAGCAGTGTGCGCCCCGAGCCGCGTTTCTTCCCTCACTGGCAGGAGACCTG
ACACCACCGCCTGTACGACTTCAACTCCTACTGGAGGGTGCACGCTGGAAACTTCTCCACCATCCCC
CAGTACTCAAGGAGAAATGGCTATGTGACCATGTCTGGTGGGAAAAGTCTTTCACCCCTGgtactgctcc
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B_____B

Figure 7B



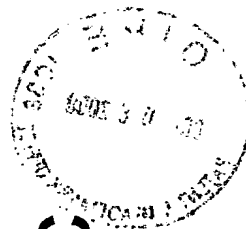
B_____

gtctttgcagagccctctctggctggcgagtcctcgctagtcagtgtct..**intron3**...tttgta
gatgaggaactgagccccaaagaaggaggntccacttgcccatctgtttacagagttttaattatg
gggagtggggtgtgaaagactcatcatgttttaacaaccttttttttttccaag.....**exonIV**
..GGATATCTTCTAACCATACCGATGATTCTCCGTATAGCTGGTCTTTTCCACCTTATCATCCTTCCT
CTGAGAGTATGAAAACACTAAGgttaaggctgtgaaaggggacatttctgaagaggaaaccactttttccc
tttgtcacataaaactactgggtatactgcatgtgtnctgtgaagctggttatataccacgaagtgtgtggg
tttcatttgtgataatgttttgacagaagtaagt.....**intron4**..tggtcagctctgagtacta
acacgtgaagggtgattatgtgaacattaaatctgtgtgtgtagccttcatggcttcatntcttgca
cttaaaaagctgatgttatattttgttttgaaag..**exonV**..ACATGTCGAGGGCCAGATGGAG
AACTCCATGCCAACCTGCTTTGCCCCGTGGATGTGCTGCCGAGGGCACCTTGCCCTGACAAA

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_____ **C**

Figure 7C



C_____C

CAGAGCACTGAGCAAGCCATACAGTTGTTGGAAAAGATGAAAACGTCAGCCAGTCCTTTCTTCTCTGGC
CGTTGGGTATCATAGCCACACATCCCCCTTCAGATACCCCAAGtgaagagctgggtgagggctgattc
cagcacagctgtgacagctgtgtgtgtgtgaggagggtttgcacaggggaaggtggctacatccct
gccatcgccaggcaccatggtgcctgatgggcactagtgtcctcagtgaggtaaatgggatttag
aggt.....intron5...aaaaggcagtatagacagtgatagagccacaagcttgcttttgctaaa
agagtgacaaactttgtggctttgtgttttcccccaag...exonVI...GAATTCAGAAAGTTGTATC
CCTTGAGAACATCACCCCTGGCCCCCGATCCCGAGGTCCTGTATGGCCTACCCCTGTGGCCTACAAC
CCCTGGATGGACATCAGGCAACGGGAAGACGTCCAAGCCTTAAACATCAGTGTGCCGTATGGTCCAAT
TCCTGTGGACTTTCAGgtatcaaggacatagtttggggatgtattggacactgatgacatagtgctgt
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D_____D



Figure 7D

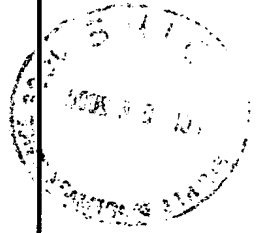
D_____D

g..**intron6**..tagggattgggagagatgcacacggcaagcattatctctgtatgccttggcaattt
aaattgcagtcactctcatcttatttttttcaatttgca.....**exonVII**..CGGAAATCCGC
CAGAGCTACTTTGCCCTCTGTGCATATTGGATACACAGGTCGGCCGCTCTTGAGTGCTTTGGACGA
TC TTCAGCTGGCCAACAGCACCATCATTTGCAATTACCTCGGATCATGtaagcattttgaaattccct
ggtagtcaaaacatctgaactttcctgtgaaacatgctttgcaaaattgccattgacataaaacatgg
gtgtg..**intron7**..tttcttctaggtgatgatttctacttcctctggtttttacaacaggaaatg
aaatggatctaaaataaacaagctgtggtatgatgattattcattttctgtcattctgtgcttttta
tgaactag..**exonVIII**..GGTGGGCTCTAGGTGAACATGGAGAATGGCCAAATACAGCAATTTGA
TGTTGCTACCCATGTTCCCTGATATTCTATGTTCTGTGAAGGACGGCTTCACTTCGGAGGCAGGCG
AGAAGCTTTTCCCTTACCTCGACCCCTTTTGATTCCGCCTCACAGTTGATGGAGCCAGgtataaaatat

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E_____E

Figure 7E

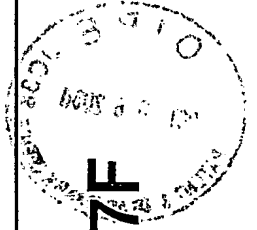


E_____E

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ggctttggggttacacagacccc...intron8...aaagataaatggtgtaaatataaaaaagaaaac
atatggagcccagacagggtcctttactgctcctgcctggccatggcaggctttataatgtaaccca
ttctgctctgtcgcttcctgtttcag..exonIX..GCAGGCAATCCATGGACCTTGTGGAACCTGTG
TCTCTTTTCCACGCTGGCTGGACTTGCAGGACTGCAGGTTCCACCTCGCTGCCCCGTTCTTCATT
TCACGTTGAGCTGTGCAGAGAAGGCAAGAACCTTCTGAAGCATTTTCGATTCCGTGACTTGGAAAGAGG
ATCCGTACCTCCCTGGTAATCCCCGTGAAGTTCCTATAGCCAGTATCCCCGGCCTTCAGACATC
CCTCAGTGGAATTCTGACAAGCCGAGTTTAAAGATATAAAGATCATGGGCTATTCCATACGCCACCAT
AGACTATAGGTATACTGTGTGGGTTGGCTTCAATCCTGTGATGAATTTCTAGCTAACTTTTCTGACATCC
ATGCAGGGAACTGTATTTTGTGGATTCTGACCCATTGCAGGATCACAAATATGTATAATGATTCCCAA

F_____F

Figure 7F



F_____F

GGTGGAGATCTTTCCAGTTGTTGATGCCCTTGAGttttgccaaaccatggatggcaaatgtgatgtgct
cccttccagctggtgagaggaggaggttagagctggtcgttttgtgattaccataatatgggaagcag
cctgagggctagttaatccaaacatgcatcaacaatttggcctgagaatatgtaacagccaaacctttt
tcgtttagtctttattaaaaatttataatttggttaattggaccagtttttttttaatttccctcttttt
aaaacagttacggcttatttactgaataaaatacaaaagcaaaactcaagttatgtcatacctttgg
atcgaagaccatacataataaccaaataacattatacacaaagaatactttcattattttgtggaa
tttagtgcatttcaaaaagtaatcatatatcaaactaggcaccacactaagttcctgattattttgtt
tataatttaataatatcttatgagccctatatattcaaaaatatattgttaacatgtaatccatgtt
tcttttttcc

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Figure 7G

